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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

of the

TOWN OF FOREST

COUNTY OF LAMBTON

1967

TOWN OF FOREST - 1967
COUNTY OF LAMBTON

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Report on a water pollution
survey of the town of Forest,
county of Lambton.

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REPORT

ON A

WATER POLLUTION SURVEY

OF THE

TOWN OF FOREST

COUNTY OF LAMBTON

JUNE 1967

DISTRICT ENGINEERS BRANCH

DIVISION OF SANITARY ENGINEERING.

ONTARIO WATER RESOURCES COMMISSION

REPORT

INTRODUCTION

A water pollution survey of water quality in surface-water drains, storm sewers, and watercourses within the Town of Forest, was conducted in June, 1967.

Information pertinent to the survey was provided by Mr. O. Leitch, Clerk-Treasurer, and Mr. W. Connally, Councillor. Mr. Connally and Mr. B. Romph, Assistant Works Foreman, assisted in the sampling programme.

GENERAL

The Town of Forest with an assessed population of 2105 (1967 Municipal Director) is located on Highway No. 21 in the north-east section of the County of Lambton. Municipal assessment is mainly residential, with commercial and light industry.

In general, surface waters and other drainage from the town is directed into the Alexander Municipal Drain and into Hickory Creek. Hickory Creek flows into Lake Huron.

WATER SUPPLY

Water for the municipality is obtained from 15 deep wells known as the West Wells, South Wells and Park Lane Wells. Depletion of the water supply has necessitated the operation of two recharge wells, one in the north-east section and the other in the south-west section of the town.

The average daily consumption is estimated at 150,000 gallons. Chlorination treatment is provided for the municipal water supply.

WATER POLLUTION CONTROL

Domestic Waste Treatment

Individual septic tank systems are currently in operation for the treatment and disposal of domestic wastes. It is indicated however, that many of these installations are not adequate and are not providing satisfactory waste treatment. This applies particularly to many older units and to units on properties in the commercial sections. These inadequacies can be attributed to:

- (i) Poor absorption qualities of the soil.
- (ii) The lack of sufficient land area for the installation of adequate field-tile disposal units.
- (iii) Faulty installations due to the lack of enforcement of septic tank installation and operation regulations.

The inadequate septic tank installations and operations result in the discharge of untreated or inadequately treated domestic sewage and other wastes into surface-water drains and watercourses. This illegal practice constitutes a major source of pollution of the receiving waters.

Industrial Waste Treatment

(i) Forest Co-operative Creamery

Process waste, cleaning waste and cooling waters are

discharged into a tank which overflows into a surface-water drain. This disposal method is inadequate and constitutes a source of pollution.

(ii) Forest Basket Company

Process waste and wastes resulting from cleaning operations are discharged without treatment into a drain which outfalls to Hickory Creek.

Refuse Disposal

The Forest municipal refuse disposal site is situated in the Township of Plympton, adjacent to a section of the southwest boundary of the town.

An abandoned shallow gravel excavation, approximately 2,000 feet from the Hickory Creek watercourse, is the dumping area. A burning and cover landfill method is practiced.

There is no indication that the operation is contributing to watercourse pollution.

WATER QUALITY ANALYSES

As a measure in assessing the level of pollution being discharged from the town, water samples were collected where possible from the flows of surface-water drains, private drains, storm sewers, and the receiving watercourse Hickory Creek.

The sanitary chemical analyses and the results of bacteriological examinations of samples collected are shown in Tables I and II respectively. The locations of sampling points are designated

on the accompanying map by Hickory Creek watercourse mileage distances from Lake Huron.

INTERPRETATION OF LABORATORY ANALYSES

For convenience in the interpretation of laboratory analyses, the Ontario Water Resources Commission objectives for water quality pertaining to surface-water drains, storm sewers and watercourses are listed as follows:

Surface Water Drains and Storm Sewers

5-Day BOD (Biochemical Oxygen Demand)
- not greater than 15 parts per million (ppm)

Suspended Solids Content
- not greater than 15 parts per million (ppm)

Coliforms (Membrane Filter)(M.F.)
- not greater than 2400 per 100 millilitres (ML)

Watercourses

5-Day BOD (Biochemical Oxygen Demand)
- not greater than 4 parts per million (ppm)

Coliforms -(Membrane Filter)(M.F.)
- not greater than 2400 per 100 millilitres (ML)

SIGNIFICANCE OF LABORATORY ANALYSES

A total of 12 drains were investigated. Of these, four discharged directly to Hickory Creek, four to the Alexander Drain and four to an open ditch in the south section of the town. Of this total, six contained no flow at the time of the inspection, while the remaining six had varying rates of flow ranging from a trickle to an estimated flow of 25 gallons per minute.

It is noted that the sanitary chemical analyses of several samples, and the bacteriological examination of all the samples produced values greatly in excess of the OWRC water quality objectives. It is therefore indicated that conditions of pollution exist in the surface-water drains throughout the town.

The excessively high coliform counts in all the drain areas indicate that sanitary sewage and other domestic wastes are the probable sources of the pollution. It is also noted that a condition of gross pollution exists in the discharge from the drain carrying the waste from the Forest Co-operative Creamery (Sample No.H-6.72).

The laboratory analyses of water samples collected from Hickory Creek show an increase in the level of pollution in the watercourse as it passes through the town areas. This condition indicates that polluting materials are being discharged into the watercourse from the town.

SUMMARY

A water pollution survey was conducted in the Town of Forest in June, 1967.

Water quality in the Hickory Creek watercourse deteriorates as it passes through the Town of Forest area. This can be attributed to the untreated and inadequately treated wastes gaining access to the watercourse.

Inadequately treated waste being discharged from the Forest Co-operative Creamery is a source of pollution.

The excessively high coliform counts of water samples collected from the surface-water drains indicate that inadequately treated and non-treated domestic sewage and waste is being discharged into the municipal drains. These drains in turn outfall to the Hickory Creek watercourse. This is illegal and constitutes a major source of pollution of the watercourse.

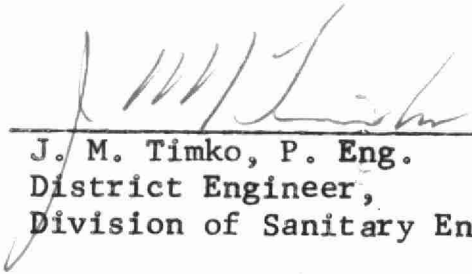
It is noted however, that in the interim since the survey was performed the municipality has contacted the Ontario Water Resources Commission and requested a sewage works project under provincial financing.

RECOMMENDATIONS

The pollution abatement programme in the Town of Forest should proceed as planned and as quickly as possible.

bh

Approved by



J. M. Timko, P. Eng.
District Engineer,
Division of Sanitary Engineering.

Prepared by:
J.K. Ferris,
Technician.

TABLE I

TOWN OF FOREST - WATER POLLUTION SURVEY

SURFACE WATER DRAINS AND STORM SEWERS

<u>Location of Sampling Points</u>	<u>Description of Sampling Points</u>	<u>5-day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Coliforms per 100 ML(M.F.)</u>
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>	
H. 6.55	Outfall to Hickory Creek drain - area of Eureka St.	12.0	702	9	693	111,000
		7.0	676	9	667	60,000
H. 6.70	Outfall to Hickory Creek North of C.N.R. bridge	16.0	748	7	741	113,000
H. 6.72	Outfall to Hickory Creek South of C.N.R. bridge	74.0	720	59	661	45,000,000
HA. 7.00	Outfall to Alexander Drain South-west corner of bridge on Main Street	2.5	802	7	795	23,000,000
HA. 7.20	Outfall to Alexander Drain South-east corner of bridge on Main Street	10.0	698	6	692	1,000,000
HA. 9.20	Outfall to Alexander Drain South-east corner of bridge on Main Street	21.0	590	24	546	2,040,000

TABLE II

TOWN OF FOREST - WATER POLLUTION SURVEY

WATERCOURSE - HICKORY CREEK

<u>Location of Sampling Point</u>	<u>Description of Sampling Point</u>	<u>5-day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Coliforms per 100 ML (M.F.)</u>
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>	
H. 7.80	Hickory Creek Upstream from Forest	3.0	394	15	379	5,240
H. 6.70	Hickory Creek at C.N.R. Bridge	70.0	662	56	606	10,000
H. 6.50	Hickory Creek Downstream from Forest	50.0	500	23	477	116,000

